

18. ON THE IDENTITY OF THE HAIRY-NOSED WOMBAT (*PHASCOLOMYS LASIORHINUS*, GOULD) WITH THE BROAD-FRONTED WOMBAT (*P. LATIFRONS*, OWEN), WITH FURTHER OBSERVATIONS ON THE SEVERAL SPECIES OF THIS GENUS. BY JAMES MURIE, M.D., PROSECTOR TO THE SOCIETY.

(Plate XLVII.)

The distinctness of certain species of Wombat has been the subject of discussion and controversy among several eminent naturalists.

As far back as 1845 Professor Owen, in a paper read before this Society, pointed out, from a skull which came into his possession from South Australia, that there must be extant another species of Wombat besides the well-known *Phascolomys wombat* of Péron and Lesueur; and for the animal from which the skull was obtained he proposed the name of *Phascolomys latifrons*, as indicative of the most prominent character displayed by the cranium. In his masterly summary of the comparison of the two skulls, published in the 'Proceedings' for 1845, p. 82, and likewise in the 'Transactions' of the Society, vol. iii. p. 303, he produced evidence so distinctive of two species as in a manner to be indisputable.

At all events, Prof. Owen's statement and opinion could not be controverted at the time, and were fully endorsed the year following (1846) by Mr. Waterhouse\*, himself no mean authority on the Marsupials.

The matter rested thus until 1861, when Mr. G. F. Angas transmitted some notes to the Society (P. Z. S. 1861, p. 268) upon an animal living in the Botanical Gardens in Adelaide, which he supposed to be the *P. latifrons* of Prof. Owen. It certainly differed in colour and relative dimensions from *P. wombat*; but as he did not examine the skull, there was still a doubt of its being the true *P. latifrons*, Owen.

This opinion of Mr. Angas was rejected by Mr. Gould, who, in his work on the 'Mammals of Australia,' 1863, vol. i. text and plates 57, 58, gave two illustrations of what he conceived to be Prof. Owen's Broad-fronted Wombat, basing his judgment on an unusually large skin sent to the British Museum from South Australia, and which was of "a light sandy buff or isabelline colour."

Shortly after this Prof. M'Coy forwarded to Mr. Gould drawings and descriptions of two Wombats, which had been acquired by the Acclimatization Society of Melbourne; and about the same time the former gentleman was enabled to examine the skull of one of these, which he pronounced to be that of *P. latifrons*†.

Notwithstanding this, Mr. Gould, in the publication of the next part of his volume already referred to, answered these observers as follows:—"I should have considered that Mr. Angas and Prof.

\* Natural History of the Mammalia, vol. i. p. 253.

† See Prof. M'Coy's description, quoted by Mr. Gould in his 'Mammals of Australia,' vol. i.



J. Smith del. et. sculp.

PHASGOMYS LATIFRONS

M & N Hancock imp



M'Coy were correct in their conclusion, had not one of the animals [supposed to agree with their description] sent to this country died, and thus afforded an opportunity of comparing its skull with that in the College Museum above mentioned [Owen's type specimen]. On this being done, it was found that the two skulls did not agree; and I believe I am at liberty to say that Mr. Flower, who has charge of the collection, is of opinion that they could never be considered as belonging to the same species.

"Under these circumstances I had no alternative but to give the Hairy-nosed Wombat a distinctive appellation, and, at the suggestion of Dr. Sclater, I have assigned to it that of *lasiorhinus*."

In the June number of the 'Annals and Magazine of Natural History' for 1863, vol. xi. p. 457, Dr. Gray has given a "Notice of three Wombats in the Zoological Gardens, Regent's Park," wherein he acknowledges two of these to be true *Phascolomys*—namely, *P. ursinus*, the already well-known species of Wombat of Péron and Lesueur, "of a dark silvery-grey colour," and another, which he calls *P. angasii*, with the "fur blackish-brown, nearly uniform."

But he says, "The third specimen is certainly a distinct genus, as distinct from *Phascolomys* as *Halmaturus* from *Macropus*, or *Ovibos* from *Bos*." For the new genus he adopts the generic term *Lasiorhinus*, and gives as a specific name *M'Coyii* to this, the very same animal which Mr. Gould had already named the Hairy-nosed Wombat, *Phascolomys lasiorhinus*.

The other large-sized Wombat in the British Museum collection, which Mr. Gould believed to be Owen's *P. latifrons*, Dr. Gray renames *P. setosus*, not acquiescing in the opinion formed by his fellow worker.

With reference to Prof. Owen's *Phascolomys platyrhinus*, originally named in the 'Catalogue of the Osteological Collection in the College of Surgeons' Museum,' and presented by Dr. Hobson (vol. i. prep. no. 1841), Mr. Gould says that it is questionable if it is distinct; although already Prof. M'Coy, in the quotation given by Mr. Gould, seems to think that Mr. Angas and Mr. Gould themselves might really have had that animal under their consideration. Dr. Gray is silent upon this species, from which one would infer that he also considers it to be only the Common Wombat.

With all this conflicting evidence before us, it at present remains uncertain whether the *P. latifrons* of Owen is yet determined—that is, as regards the identification of the skin or living animal with the skull first described and demonstrated by him to belong to a distinct species. The same may be said of his *P. platyrhinus*.

As to the other species of Mr. Gould and Dr. Gray, these alone rest on such external characters that a more complete examination of the skeleton and internal anatomy may prove them either to be varieties of *P. wombat* or *P. platyrhinus* itself.

The typical specimen of Wombat to which Mr. Gould gave the name of *P. lasiorhinus*, and the same alluded to and figured by him in his volume, having lately died at the Society's Gardens,



it became a point of interest to examine the body, and particularly the skull, with the endeavour to set the disputed point at rest.

For this purpose, and in order to learn how far this specimen agrees or differs from the supposed *P. latifrons* of Mr. Angus and Prof. M'Coy, the colour, aspect, and dimensions may first be noted.

This I consider the more desirable as, although Mr. Gould has signified that those observers had the same animal under their consideration, yet he has not compared in detail the appearance of the Society's specimen.

The two sides of the body of this (the skin of which is now deposited in the National Collection) are of a lightish grey, tinged with brown (the silvery mouse-colour of Angus). This is produced by the roots of the hairs being of a dark brown, their points, for half an inch or so, tipped with white and buff; while widely scattered through the whole are single black hairs. Here and there wavy mottled lines are seen, where a preponderance of the dark or light tints run side by side. The upper surface of the neck, the shoulders, and back, almost as far as the loins, are of a darker brown, caused by the hairs terminating in an umber-colour.

The broad, somewhat truncated posterior extremity of the body is of a more rufous tint, and the hairs are stronger and longer, rough, and directed inwards, or in an opposed line to those of the back (the circular rosettes of M'Coy).

The under surface of neck, chest, and inside of fore limbs is white, the continuation of this in the abdomen and inside of hind legs merging into a light rufous tint, which joins the similar but rather darker hue of the rump of the animal.

The outsides of the hind limbs are also of a rufous brown, of the fore limbs less so, inclining to the same shade as the sides of the body. The posterior border of each of the fore limbs has a projecting white fringe of longer hairs, the continuation of those from the axilla. The feet are hairy to the proximal end of the claws, and of a hazel-brown.

Upper surface of the forehead lighter than the back of the neck, but of a similar shade to the sides of the body. There is a whitish-grey spot above and below the eyes, and a large triangular black portion at each inner and outer canthus. Upon the centre of the forehead, between the eyes, is a black or dark-coloured spot.

The eyelashes and cheek-whiskers have strong black hairs, intermixed with one or two white ones. The tip of the nose and around the nostrils is white (this may have been more flesh-coloured when the animal was alive); the bridge of the nose above this is of a drab tint, and covered with very short smooth hairs. There is a similar coloured patch upon the under surface of the mandible; but the root of the lower jaws is of a yellowish colour, lost in the white of the neck.

The backs of the ears are similar to the neck; but there is a tuft of long white hairs on their outer base, and inside they are covered by short, stiff, appressed whitish hairs.

*P. lasiorhinus* is also rather longer and broader in the body than *P. wombat*; the ears are long and elliptically pointed, instead of being short and rounded; and the face is broader; but this is in part

produced by the more dilated fleshy muzzle and open nostrils. In *P. wombat* the nose is certainly more pointed.

The fur is very peculiar, uncommonly soft, fine, and silky to the feel, the whole animal being in a greater or less degree more glossy than the common species.

Prof. M'Coy, so far as I am aware, has not given any measurements of the one examined by him; but I quote Mr. Angas's, placing them opposite the dimensions taken by myself, as shown underneath:—

	Society's spec.		Mr. Angas's.	
	in.	lin.	in.	lin.
Body: Length from snout to root of tail .....	37	0	37	0
———— of tail .....	1	0	1	0
Height at shoulder .....	13	6	12	0
———— at loins (hips) .....	13	0	14	0
Girth at the chest .....	35	0	28	4
———— at the loins .....	32	6		
———— at the neck .....	19	6		
Breadth of back at scapulæ. ....	7	6		
———— at middle .....	9	0		
———— at iliac bones .....	8	0		
Head: Length from snout to occiput. ....	9	0	10	0
———— nose to root of ear .....	8	0		
Girth above eyes .....	18	6	18	0
Breadth between eyes (inner canthus). ....	3	11	3	0
———— (outer postcanthus) .....	6	0		
———— roots of ears .....	5	0	5	0
———— of muzzle .....	2	6		
———— between tips of ears .....	11	0*	8	0
Ears, length .....	3	0	3	8
———— breadth, when flattened out .....	2	0		
Orbit (elliptical), length .....				
———— breadth .....				
Fore limb: Girth at axilla .....	10	0		
———— at middle .....	8	0		
———— at wrist joint .....	5	0		
Sole of foot, length to tip nail mid. toe .....	2	6	3	3
———— of thumb .....	1	3		
———— breadth posteriorly ....	2	1½		
———— at about its middle ....	1	9		
Hind limb: Girth at groin .....	12	6		
———— at about middle .....	7	0		
———— at ankle-joint .....	5	0		
Sole of foot, length to tip nail mid. toe .....	3	9	4	4
———— of great toe ....	0	6		
———— breadth posteriorly ....	1	9		
———— about middle ..	1	7		

\* The great difference here shown of 3 inches may in truth not exist; for in taking the dimensions the ears were pulled apart, which evidently was not the case in Mr. Angas's specimen; but I had not his paper by me at the moment.

From the foregoing remarks it will be seen that the Wombat under consideration differs widely from the Common Wombat, both as regards dimensions and colour—also that there is a most close agreement in the aggregate with the externally marked characters so well described by both Mr. Angas and Prof. M'Coy; in fact they so approach each other as to leave little room for doubt that these gentlemen had the very same species under their consideration. If, indeed, without looking at the specimen, the hand be passed over the skin, the fur feels so extremely soft and silky that one would not for a moment confound the animal with any other of the known adult Wombats.

So far one may rest satisfied with these three individual specimens of Wombat being of the same species; for notwithstanding that Mr. Angas has not particularly remarked the hairy muffle, and although the feet in his specimen seem to have been lighter in shade than Prof. M'Coy's, yet the latter gentleman in his very graphic account does not lay sufficient stress on the equally telling peculiarity, the softness of the fur. Besides this, every other part of their separate descriptions admirably coincide.

Having descanted with sufficient minuteness upon the general outward appearance of our specimen and its similarity with those deemed to be *P. latifrons*, it remains to be demonstrated from the skull that ours is compatible with no other than the Broad-fronted Wombat; and upon the cranium the whole argument turns.

In the article already quoted (in the 'Transactions' of this Society) Professor Owen has given excellent plates of the natural size of the skulls of *P. wombat* and *P. latifrons*. He has, furthermore, succinctly described and pointed out in detail the characteristic differences between the two.

On comparing, then, this skull of *P. lasiorhinus*, Gould, with the original typical specimen at the Museum of the College of Surgeons and with Owen's plates and descriptions, it agrees so completely in every respect as to leave not a shadow of doubt as to its identity.

The more easily recognizable differences in *P. latifrons*, of the greater height of the intermaxillary bones, the broader and nearly equal-sided triangular nasals, the great interorbital breadth, and well-marked postorbital processes, together with the enormously excavated supratympanic cells, are determinable at a glance; further minute and critical examination but certifies to the correctness of this off-hand and cursory inspection.

No further direct evidence or lengthened description is therefore presumed to be necessary, excepting to lay the skull alongside Owen's figures before the Society, when the conclusive identity of the cranium of the *P. lasiorhinus* of Gould with the *P. latifrons* of Owen must at once be admitted.

Although essentially agreeing in all the specific characters, the present cranium of *P. lasiorhinus* differs in several minor details from the original type specimen, which may be worthy of mention as illustrating that in individual skulls of the same species such slight variations do occur, probably either from sex or age.

Our skull is apparently from a younger animal, as the sagittal and lambdoidal sutures are not obliterated as in the College specimen, which latter has also the supraoccipital crests and the postorbital angles more prominent. The frontal bones anteriorly, as well as the nasals at the median suture, in our specimen are very flat, whereas in the typical skull they are convex and considerably raised. In this last cranium the frontal bones in the median line extend with a thin narrow wedge-shaped projection forward for half an inch between the nasals; in our specimen the two nasal bones posteriorly form nearly a straight line across. The posterior palatine foramina are larger in our younger skull, and have between them a more slender columella of bone.

Both skulls have the foramen magnum of an oval outline; in this respect they materially differ from *P. wombat* and the type of *P. platyrhinus*, which have it of a trefoil figure, as Owen\* has observed.

While studying the matter from a different point of view, by reason of the *P. lasiorhinus* taking the place of Gould's *P. latifrons*, and upon comparing the size of several adult crania of *P. wombat*, I was struck with the great size assigned by Mr. Waterhouse†, in his volume already mentioned, to two skulls, namely that of Owen's *P. latifrons* and the common *P. wombat*. The latter, which he considered typical, was one in the British Museum collection, and, as he believed, belonged to an aged individual.

Upon consideration, I concluded he must have had before him, and taken his admeasurements from, a specimen of *P. platyrhinus* without being aware, or at least believing, that this species differed from *P. wombat*.

On examination of the very same skull from which his measurements were taken, proved by the exactness of its dimensions, and by the partial obliteration of the frontal and nasal sutures as stated by him to exist in the specimen, I found, to my surprise, I had been forestalled, while supported in opinion, as already Professor Owen, most possibly without being aware of this being Mr. Waterhouse's type of *P. wombat*, had relabelled the skull in question *P. platyrhinus*. This fact was certified by Mr. Gerrard's showing me the Professor's own handwriting on the ticket attached to the specimen.

My attention in this way was called to think upon what might be considered the average or comparative limits of the size of the crania of the three species *P. wombat*, *P. latifrons*, and *P. platyrhinus*.

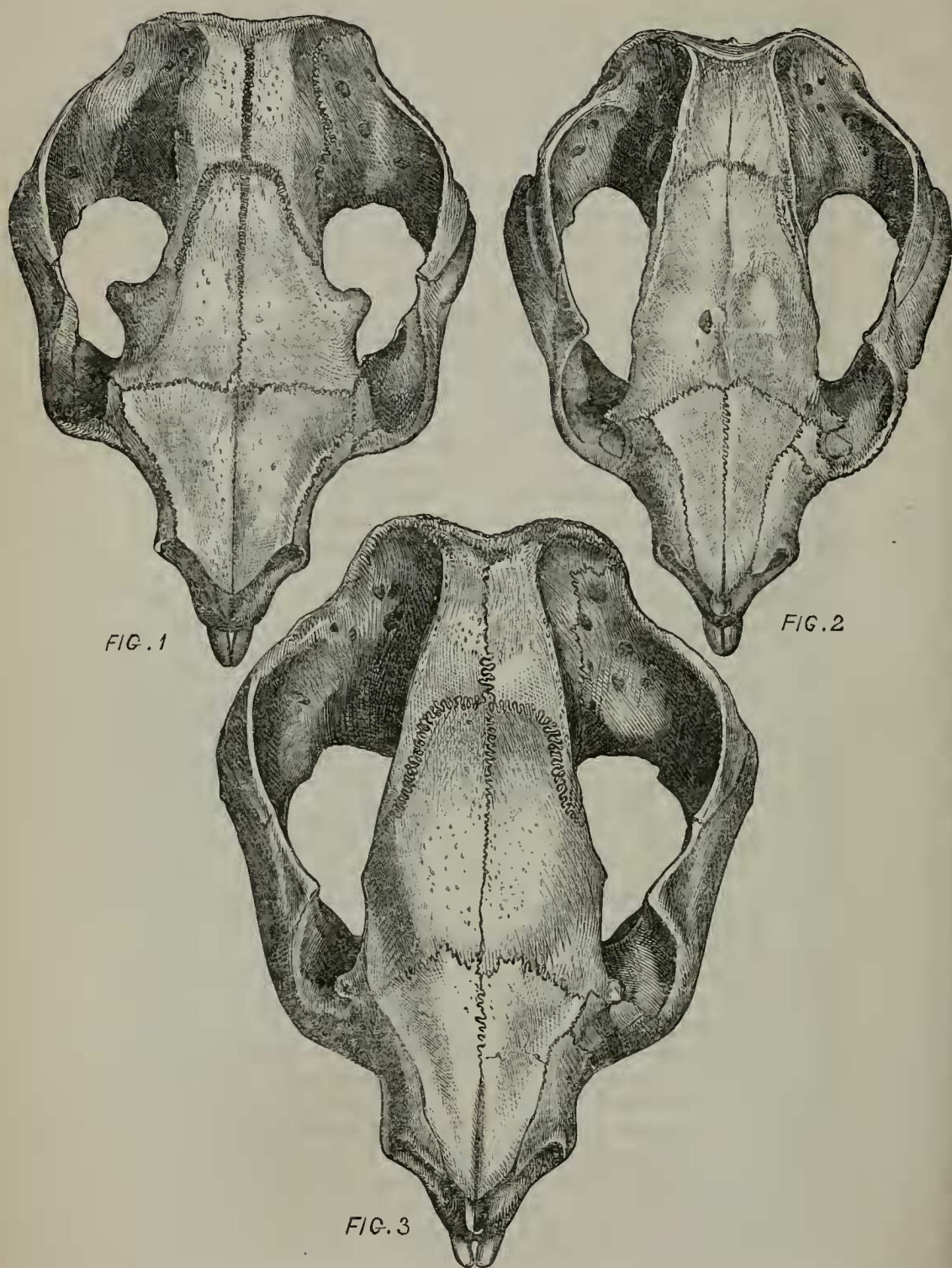
The following table is the result of a series of measurements of skulls, chiefly those in the British Museum and College of Surgeons.

In the first column of the table are shown the proportions of the typical skull of *P. latifrons*, Owen; alongside of which are the corresponding dimensions of this second cranium, belonging to the same species: the agreement in their several proportions is very close. Then follow the comparative measurements of a series of crania of what I take for the true *P. wombat*; these are intended to illustrate the skull at different ages in this species.

\* "On the Osteology of the Marsupialia," Trans. Zool. Soc. vol. ii. p. 383.

† Nat. Hist. Mamm. vol. i. p. 251.





Skulls of the three species of Wombat, reduced to one-half of the natural size.

- Fig. 1. *P. latifrons*, Owen, from a specimen lately living in the Society's Gardens.  
2. *P. wombat*, Pér. et Les., from a specimen belonging to Mr. Gerrard.  
3. *P. platyrhinus*, Owen, from a specimen belonging to Mr. Bush.

Table of the Comparative Admeasurements of a series of Skulls of Wombats.

	<i>P. latifrons</i> , Owen.		<i>P. wombat</i> , Péron et Lesueur.						<i>P. platyrhinus</i> , Owen.					
	Typical skull, Coll. Surg.	Zool. Soc. spec. Fig. 1.	Brit. Mus., no. 291 a.	Brit. Mus., no. 291 c.	Spec. belonging to Mr. Gerrard. Fig. 2.	Brit. Mus., no. 291 d.	Brit. Mus., no. 291 b.	Coll. Surg., no. 1792.	Typical skull, Coll. Surg., no. 1841.	Mr. Bush's spec., no. 1797 a, Coll. Surg.	Sir G. Grey's spec., Coll. Surg.	Mr. Bush's spec., now Mr. Frank Bucklands.	Mr. Bush's spec. Fig. 3.	Brit. Mus. type, given as <i>P. wombat</i> by Waterhouse.
	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. lin.	in. li.	in. lin.
Total length of cranium .....	6 3	6 5	5 6	6 1	6 2	6 4 $\frac{1}{2}$	6 9	6 9 $\frac{1}{2}$	7 3	7 3	7 4 $\frac{1}{2}$	7 5	7 7	8 1
Greatest width, which is at the posterior part of the zygomatic arch .....	5 0	4 9	4 1	4 9	4 8	4 9	5 3	4 11	5 6	5 5	5 6	5 7 $\frac{1}{2}$	5 6	5 9
Width of skull behind orbits, where contracted by temporal fosse .....	1 3?	1 5 $\frac{1}{2}$	1 5	1 6	1 4	1 8	1 9	1 6 $\frac{1}{2}$	2 1	2 0	1 11	2 1	2 1	1 11
Width, anterior part of zygomatic arch .....	.....	4 0	3 3	3 3	3 7 $\frac{1}{2}$	3 6	3 10 $\frac{1}{2}$	4 1 $\frac{1}{2}$	4 6	3 11	4 7	4 7 $\frac{1}{2}$	4 5	.....
Length from occipital crest to temporal fossa .....	2 0	2 2	2 3	2 3	2 5	2 6	2 5	2 6	2 2	2 2	2 4	2 2	2 2	2 11
Length of nasal bones .....	2 5	2 4	2 5	2 6	2 5	2 6	2 5	2 6	2 2	2 1	2 1	2 1	2 2	2 2
Width of same behind .....	1 2	1 2	0 7	0 6	0 7 $\frac{1}{2}$	0 7 $\frac{1}{2}$	0 8	0 7	0 10 $\frac{1}{2}$	0 9	0 11	0 9	0 11	0 10
Width of same near apex .....	2 5	2 4 $\frac{1}{2}$	1 11	2 2	2 4 $\frac{1}{2}$	2 1 $\frac{1}{2}$	2 7 $\frac{1}{2}$	2 6	2 6	2 7 $\frac{1}{2}$	2 4 $\frac{1}{2}$	2 5	2 11	2 6
Length of frontal bones .....	2 9	2 7 $\frac{1}{2}$	1 9	1 10	1 11	2 0	2 2	2 0	2 2	2 3	2 5	2 5	2 4 $\frac{1}{2}$	.....
Width of same between orbits .....	.....	0 3	0 4 $\frac{1}{2}$	0 7	0 7	0 7	0 8	0 7 $\frac{1}{2}$	.....	0 7 $\frac{1}{2}$	.....	0 8	0 7	.....
Width of each intermaxillary bone as seen from above .....	3 7	3 8	2 11	3 2	3 5	3 6	3 2?	.....	4 3	4 1	4 1 $\frac{1}{2}$	4 3	4 3	4 7
Length of palate .....	0 5 $\frac{1}{2}$	0 3 $\frac{1}{2}$	0 4	0 3 $\frac{1}{2}$	0 4 $\frac{1}{2}$	0 3	0 4	.....	0 5	0 3	0 3 $\frac{1}{2}$	0 3 $\frac{1}{2}$	0 4	0 5
Width between the anterior molars .....	0 10 $\frac{1}{2}$	0 9	0 7	0 8	0 8	0 8	0 9	.....	0 11	0 10	0 9	0 10	0 9	1 0 $\frac{1}{2}$
Width of both superior incisor teeth .....	0 9	.....	0 6	0 6 $\frac{1}{2}$	.....	0 6	0 10	0 8 $\frac{1}{2}$	0 9	0 9	.....	0 9	0 9	0 9
Depth of the same taken singly .....	0 3	.....	0 3	0 4	.....	0 4 $\frac{1}{2}$	0 3	0 3	0 4	0 4	.....	0 5	0 6	0 5
Distance between incisor teeth (upper jaw) and molars .....	1 6 $\frac{1}{2}$	1 8	0 11	1 2 $\frac{1}{2}$	1 2	1 3	1 4	1 5	1 9	1 9	1 7	1 7	1 9	1 11
Total extent of row of molar teeth .....	1 9	1 10 $\frac{1}{2}$	1 7	1 10 $\frac{1}{2}$	1 11	1 11	2 1	1 8	2 11	2 0	2 2	2 1	2 0	2 1 $\frac{1}{2}$
Length of lower jaw .....	4 4	.....	3 11	4 5	.....	4 4 $\frac{1}{2}$	4 9	4 9	.....	.....	.....	5 7	5 7	5 11
Widest breadth of same .....	.....	.....	3 11	4 7	.....	4 9	5 0	4 10 $\frac{1}{2}$	.....	.....	.....	5 7	5 4	5 9
Height in a vertical line dropped from coronoid process .....	2 9	.....	2 9	2 8	.....	.....	3 2	3 0	.....	.....	.....	2 9	2 11	2 11
Width of lower incisors .....	0 6	.....	.....	0 7	.....	0 6	0 7 $\frac{1}{2}$	0 8	.....	.....	.....	.....	0 7	0 8
Depth of the same .....	0 3	.....	0 2	0 2	.....	0 3	0 4	0 3	.....	.....	.....	.....	0 3 $\frac{1}{2}$	0 3 $\frac{1}{2}$

Lastly are given a number of crania of what I suppose to represent *P. platyrhinus*, on account of their great size and other distinguishing peculiarities. These last are of much greater relative dimensions than either of the others.

Being convinced that the skull of Mr. Gould's *P. lasiorhinus* (Gray's *Lasiorhinus latifrons*) answered in all particulars to Owen's *P. latifrons*, and that there was, moreover, a somewhat constant and striking difference between the crania of *P. wombat* and others answering to the typical skull of *P. platyrhinus*, I found myself prepared to believe that this last might, after all, turn out to be identical with Dr. Gray's and Mr. Gould's larger-sized species.

This idea would have but rested, or been dependent, on the supposition of the relation of the superior-sized skulls to the larger skins, had I not had the good fortune of obtaining an entire skeleton and a separate skin of what I have since made out to be two individuals of *P. platyrhinus*.

My able colleague, Mr. A. D. Bartlett, in his customary kind manner, procured these for me from his friend Mr. Bush, of Clapham. The latter gentleman had received three unusually large living specimens of Wombats from Victoria in 1863 or 1864; and all of the animals subsequently dying, he retained the skin of one, and the entire dried carcass of another.

I have also been favoured in having had access to several portions of the skeleton which belonged to the above skin, and among these the cranium\*, which is so important, inasmuch as it shows that the two animals belonged to the same species. Furthermore I have been assured they were male and female, which thus extricates us from the difficulty which might be raised that the large size of the skull was probably dependent on sex. The several bones to which I have just made allusion grace the admirable new osteological series formed by Mr. Flower at the Hunterian Museum.

I shall now take into consideration the skulls of these two Wombats as enabling a judgment to be formed how far they agree with *P. platyrhinus*, commencing with that one first regarded by Owen as presenting specific differences.

In the 'Osteological Catalogue of the Museum of the Royal College of Surgeons' (vol. i. p. 334), Professor Owen in naming the skull of a Wombat (*P. platyrhinus*) points out that "it differs from the *P. vombatus* in its superior size, in the greater relative breadth of the nasal bones, and in the larger and deeper excavation above the tympanic bone." These distinguishing characters coincide with those of the skulls in question; and further comparison of the latter with the typical cranium itself permits of other resemblances being noted, as well as that they vary slightly individually; while altogether they do not coincide with the skulls of *P. wombat*, to which, however, in some points, they bear close analogies.

If the preceding table be consulted, it will be best seen what com-

\* Now no. 1797a, Osteological Series, Mus. Roy. Coll. of Surgeons. The specimen has been regarded as belonging to the Common Wombat and named accordingly by the present Conservator.



parative agreement there is between these three in measurements, and in what respects they differ from those of *P. wombat*.

Before summing up the marks which seem to indicate or serve as a means of distinguishing the skull of *P. platyrhinus* from that of *P. wombat*, it is proper I should dwell for a moment upon some observations on the skull of this last species made by Dr. Gray (Proc. Zool. Soc. 1847, p. 41). I must, however, with due deference to that naturalist, acknowledge my ignorance of his paper until my attention had first been directed to some of the differences which he so concisely indicates. In his paper he points out that three crania of Wombats in the British Museum vary from each other in several particulars. Two of these, from Van Diemen's Land, are much smaller, more depressed and truncated behind, and have two moderate-sized oblong postpalatine foramina; the third specimen, from New South Wales, is altogether bigger, and has two large triangular postpalatine foramina; while all three disagree in the relative position and size of their upper incisors.

These differences he attributes to individual variation, although suggesting that more than one species might be confounded under the same name. We see from this that Dr. Gray, without exactly admitting specific distinction, yet was the first to call attention to several of the diagnostic peculiarities of *P. platyrhinus*.

The chief specialities, therefore, which seem to serve to distinguish the skull of *P. platyrhinus*, are these four:—the greater size of the cranium, the greater relative breadth of the nasal bones, the moderately deep tympanic excavation, and more triangular form of the posterior palatine foramina as compared with that of *P. wombat*.

In *P. latifrons* the supratympanic cavity and postpalatine foramina are still larger than in *P. platyrhinus*, especially the latter in one of the specimens examined. In *P. platyrhinus* the columella, composed of the two conjoined inner edges of the horizontal plates of the palatine bones, is intermediate in thickness between those of *P. latifrons* and *P. wombat*, the last having it the stoutest. Professor Owen\* says that these foramina "deserve particular attention, as they are generally specific."

The more depressed truncation in the skull behind, as observed by Dr. Gray in *P. wombat*, may be due to age; but it is noteworthy that in the adult of *P. platyrhinus* there are two very marked backwardly produced supraoccipital crests, and these are much stronger in every way than in the largest specimen of *P. wombat* that I have seen.

In *P. platyrhinus* the two squamous portions of the temporal bones are relatively shallower than in *P. wombat*, while *P. latifrons* has them most prominent and convex.

Both in *P. wombat* and *P. platyrhinus* the upper incisors present an internal longitudinal furrow; *P. platyrhinus*, besides, has a longitudinal groove upon the external surface near the posterior angle, which I do not find in *P. wombat*, excepting very slightly in one specimen in the College of Surgeons, where it is almost dis-

\* Trans. Zool. Soc. vol. ii. p. 388.



cernible, but broader and shallower, in the right upper incisor. In the same specimen, however, the left one does not exhibit any sign of such a depression. Longitudinal striation of these teeth in *P. wombat* is not constant as it is in *P. platyrrhinus*.

The frontal sinuses in *P. platyrrhinus* correspond in size to the greater breadth of cranium at this part, but they are still larger in *P. latifrons*.

The outer surface of the symphysis of the mandible in *P. platyrrhinus* tapers steadily as it passes backwards towards the molars; in *P. wombat* it juts out very considerably opposite the premolar.

The two lateral parietal ridges are more raised, and taper more towards each other at the occiput, in *P. platyrrhinus*; but this may be sexual, as in Mr. Bush's female specimen they are very similar to those of *P. wombat*.

Although drawing attention to what seems to separate and distinguish the crania of *P. platyrrhinus* from *P. wombat*, it must be borne in mind that I do not lay great weight upon the minor distinctions which I myself have observed; for, in a more extensive series of specimens than that which I have been able to examine, it is possible these may be found to be fallacious. In truth, I but call attention to these points as worthy of future observation, the more essential differences being those previously noted by Prof. Owen and Dr. Gray.

Assured respecting the similarity of the skulls of these two specimens to the type of *P. platyrrhinus*, the next point of importance is the consideration of the skin as a means of ascertaining if it resembles any of the species named alone from external characters.

The skin of one of Mr. Bush's specimens, which I place before the Meeting, is not in such a perfect state as could be wished; but it is in sufficient condition, and well enough shows that the hair all over the body and limbs is of a dark-brown colour, and not so mingled with grizzly grey as in the common species. The nape of the neck is somewhat darker, the hairs being more tipped with black; and this is continuous along the median line of the back, broadening out at the loins into a more diffused blackish tinge.

The head is of a similar brown colour, as are the sides of the body, the lightest shade being underneath the neck.

The ears are too much destroyed for the colour or appearance to be distinguished.

The fur is coarse, quite different from that of *P. latifrons*, and more resembling that of the common species.

The skin altogether is rather larger than that of the Common Wombat, as the size of the bones clearly demonstrates.

Neither the coloration of the skin, its size, nor that of the entire animal harmonizes with our knowledge of the common species; but they answer precisely to Dr. Gray's definition of the characters belonging to the species he has named *Phascolomys angasii*. Moreover in some respects the coloration approaches, especially in the back, the shade of the animal at present living in the Society's Gardens, which Mr. Gould names *P. niger*.

Indeed, after carefully comparing the skin, which I show you, with the large darker-coloured living animal, I feel quite satisfied as to the two being of one species; for, although the one at the Gardens is much the darker variety, it seems to me we have merely the same basis of brown tint in both, the living animal having more generally diffused blackish-tipped hairs distributed through it; the colour is certainly not a pure black in the specimen named *Phascolomys niger*\*.

I may also add that when Dr. Gray saw the present brown skin, he recognized it as similar to that of the Wombat which he named *P. angasii*.

Apart from the immediate study of the skin, but yet in close connexion with it, I may be allowed for a moment to call attention to the casts of soles of the feet of the three species, which present gradations in dimensions corresponding to the size of the different animals, but they agree in the disposition of the pads and furrows.

The following are the comparative admeasurements taken from the posterior part to the roots of the nails, the nails themselves being injured from the difficulty experienced in retaining the foot in steady position while the creature struggled to relieve itself:—

	Length.		Breadth.	
	in.	lin.	in.	lin.
Fore foot, Hairy-nosed Wombat, <i>P. latifrons</i> . . .	2	5	2	3
———, common species, <i>P. wombat</i> . . . . .	2	10½	2	6
———, Black Wombat, <i>P. platyrhinus</i> (?) . . .	3	3	3	0
Hind foot, Hairy-nosed Wombat, <i>P. latifrons</i> . .	3	6	1	8
———, common species, <i>P. wombat</i> . . . . .	3	8	1	11
———, Black Wombat, <i>P. platyrhinus</i> (?) . . .	3	10½	2	3

In this manner, from the comparative examination of skull and skin, we are driven to the conclusion that the original *Phascolomys platyrhinus* of Prof. Owen includes Dr. Gray's species *P. angasii* and Mr. Gould's *P. niger*; so that there remains but one animal which there may still be a doubt respecting, namely, "the Big Yellow Fellow" of the natives of the Murray River (Mr. Gould's *P. latifrons* and Dr. Gray's *P. setosus*); but, after what I have shown in favour of a diminution of species, it is possible it may likewise only be found to be a light variety of *P. platyrhinus*.

In further support of the probability of this last view, I exhibit to the Society the skin and skull of a young specimen of Wombat, which possess uncommon interest from the fact of their being the preserved parts of the specimen made mention of by Mr. Gould; indeed they are neither more nor less than the same which he supposed to be a young Hairy-nosed Wombat, and the skull of which he showed to Mr. Flower, who, on comparison, rightly pronounced it to belong to an animal unlike the *P. latifrons* of Owen.

To judge of this young skull we of course require to compare it with those of the different species; and taking that of *P. latifrons* to commence with, it differs essentially from this in the

\* Gould's 'Mammals of Australia,' vol. i. letterpress to pl. 60.

form of the incisors, in the breadth of the postorbital processes, in the shape of the zygomatic arches, in having a shallow and not the enormous excavation of the tympanic cavity, and in the relative length to the breadth of the entire cranium.

As compared with *P. wombat*, it more nearly corresponds to that type, but already, in this young stage, has the posterior palatine foramina larger than in *P. wombat*, thus agreeing with *P. platyrhinus*. The nasal bones also assimilate with *P. platyrhinus* in their greater relative breadth; the tympanic cavities are larger than what might be expected in the young of *P. wombat*, although not equal to *P. latifrons*; and the upper incisor teeth are set slantingly together and are deeply longitudinally striated, as in *P. platyrhinus*. From all these characters one would infer it to be the cranium of a young *P. platyrhinus*, and not either that of *P. latifrons* or *P. wombat*.

The skin of this specimen assists us in determining the species.

The body and legs are of a yellowish-brown colour, considerably darker, even to blackish brown, upon the neck and back; the fore feet are brown; the head, under surface of neck, whole of abdomen, and inner surface of legs are light sandy-buff (isabelline colour).

The ears are large and prominent and somewhat pointed, clothed posteriorly with hair the same colour as that of the back of the neck, apparently also hairy inside; but this must be expressed with a doubt, from their abraded condition.

The eyebrows and cheek-whiskers are black. There is no white hairy muffle as in *P. latifrons* (*P. lasiorhinus*).

The outward characters, therefore, clearly define it from *P. wombat*, even if we are dubious by reason of the age of the animal; for in *P. wombat*, at a similar early period, the colour is not different from that of the adult. Dr. Gray\* has remarked that "the young Tasmanian Wombat (*P. ursinus*) is dark like the adult," and this fact is proved by specimens at present displayed in the British Museum.

The absence of the white hairy muffle, coarser nature of the hair, and the colour prevent one classing it with the *P. latifrons*; so that it must either be the young of Gould's large species or of Dr. Gray's *P. angasii*; for it combines the colour of both, and leads to the supposition that these two may be but varieties of the same species.

As I have tried to show that the brown species, *P. angasii*, comports with Owen's *P. platyrhinus*, and also that this young skull likewise agrees more closely with *P. platyrhinus* than *P. wombat*, there remains to be said that, if I have given sufficiently convincing data, it will be allowed the several species of the authors named must be grouped, at least provisionally, or until better evidence is produced to the contrary, under the head of *P. platyrhinus*, Owen; for, according to the law of priority, this specific name is that which ought to be adopted.

I have, in this place, a further remark to make regarding the

\* Annals and Mag. Nat. History, 1863, vol. xi. p. 459.

fossil species of Wombat (*P. mitchelli*, Owen). Professor Owen, in the 'Catalogue of Fossil Mammals and Birds in the Museum of the Royal College of Surgeons,' has formed a separate species upon the evidence of a few molar and incisor teeth, and observes, "In this species the molar teeth have the antero-posterior diameter greater in proportion to the transverse, as compared with the molars of *P. wombat*; the first grinder is also relatively larger, and of a more prismatic form; the upper incisors are less compressed, and more prismatic; this difference is so well marked that, once appreciated, any one might recognize the fossil by an incisor alone. There is a similar difference in the shape of the lower incisor. The fossil is also a little larger than the largest cranium in the Hunterian Collection."

When this species was formed, the skull of *P. platyrhinus* could not have been in the Hunterian Collection\*; for, upon examining the fossils in question, I find that they answer closely to the corresponding parts of *P. platyrhinus* in the same Museum; neither are they so very large, as one of the molars fitted the socket of the jaw of the skull which I show you. I have been enabled also to examine some other portions of fossil Wombats' jaws, obtained from the Wellington Caves, Australia, and now deposited in the Geological Society's Museum. These also correspond to the same parts in *P. platyrhinus*, one large piece, the roof of the mouth with teeth *in situ*, being exactly the same in measurement as the bone of the male specimen obtained from Mr. Bush.

In the size of the bones and shape of the teeth, then, it would seem, the fossil form *P. mitchelli* agrees with the recent species *P. platyrhinus*; so that we have a curious and most important piece of evidence that this species may have existed during the post-pliocene period, and have been a congener with those gigantic Marsupials the *Macropus atlas*, *Diprotodon australis*, and *Nototherium inerme*.

Besides this last fossil form of animal resembling *P. platyrhinus*, there is still another, but of enormous magnitude, a more fit representative of and companion to the above gigantic fossil Marsupials. The specimens on which a separate species has been founded, and provisionally named *Phascolomys magnus*, are deposited in the British Museum, and consist, among others, of the following parts:—

Portions of a lower jaw containing teeth.

Portions of radius and ulna.

A whole tibia.

Several vertebræ, and various fragments of different bones.

There are, besides, in the Collection, although not displayed, two plaster casts of mandibles and other parts evidently belonging to the same species.

The very great size of all of these bones entirely precludes them from being confounded either with the recent or other formerly existing, but possibly contemporaneous, species.

\* I have now the authority of Professor Owen to state that I am correct with regard to the supposition of the skull in question not having been in the College Collection when *P. mitchelli* was named.



These larger fossils are all marked as having been obtained from the post-pliocene deposits, Darling Downs, Australia, and were presented to the National Collection, some by Sir Daniel Cooper, Bart., others by T. W. Isaacs, Esq.

They are as yet undescribed; but Prof. Owen, in his article on the "Osteology of the Marsupialia," Trans. Zool. Soc. vol. iii. p. 306 (1849), refers to similar specimens in the following terms:—"I have recently obtained evidence from the post-pliocene deposits of the district of Melbourne, through the kindness of my friend Dr. Hobson, of an extinct Wombat, a true *Phascolomys*, at least four times as large as either of the known existing species."

At a future time I may find opportunity to treat more fully upon the comparative differences of the remaining bones of the skeleton of the three animals, the skulls of which I have figured, and therein point out in detail the reasons for adopting Dr. Gray's generic term *Lasiorhinus* (which, however, I am inclined only to use as subgeneric) to the animal known as the Broad-fronted Wombat of Owen, and the Hairy-nosed Wombat of Gould.

But for the present I shall assume the distinction, and at this stage terminate by calling attention to what, from my short researches, I deem the proper specific classification, characters, and synonyms of the group.

#### PHASCOLOMYIDÆ.

Genus PHASCOLOMYS.  $\left\{ \begin{array}{l} 1. P. wombat, \text{ Péron et Lesueur.} \\ 2. P. platyrhinus, \text{ Owen.} \\ 3. P. magnus? \text{ (fossil).} \end{array} \right.$

Subgenus LASIORHINUS. 4. *P. latifrons*, Owen.

I have not here included the fossil genus *Diprotodon*, previously classed in this group by Prof. Owen (Trans. Zool. Soc. vol. ii. p. 332), as I believe more recent observations tend rather to show its nearer affinity to the Kangaroos.

#### Order MARSUPIALIA.

##### Family PHASCOLOMYIDÆ (Owen, 1839).

*Characters*.—Incisors  $\frac{2}{2}$ ; canines  $\frac{0}{0}$ ; premolars  $\frac{1-1}{1-1}$ ; molars  $\frac{4-1}{4-1}$  = 24. Incisors scalpriform in both jaws; false and true molars with persistent pulp. Stomach outwardly simple, but containing within a special cardiac gland; cæcum short and wide, with a vermiform appendix.

##### Genus PHASCOLOMYS (Geoffroy, 1803).

*Phascolomys*, Geoffroy, Notice sur une nouvelle espèce des Mammifères, &c., Ann. du Mus. d'Hist. Nat. ii. p. 364, 1803.

*Vombatus*, Geoffroy, Bulletin des Scien. par la Soc. Philom. iii. p. 185, 1803.

*Phascolomys*, Illiger, Prodronus Syst. Mamm. p. 77, 1811.